

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 1 has been amended to incorporate the subject matter of claims 5 and 8, which have been canceled, as well as to recite a hand member and liquid crystal display member, and to clarify the structure of the upper illuminating portion (previously recited as the "first" illuminating portion). It is respectfully submitted that the amendments to claim 1 are fully supported by the specification and drawings, and that claim 1 remains readable on the elected species of Figs. 14-17. See the attached annotated version of claim 1, which identifies support for the recitations therein with reference numerals.

In addition, claims 4, 9-12, 14, 15 and 17 have been amended to better accord with amended claim 1 and to make some minor grammatical improvements so as to put them in better U.S. form.

No new matter has been added, and it is respectfully requested that the amendments be approved and entered.

It is respectfully requested, moreover, that withdrawn claims 4, 9-12, 14, 15 and 17 depending from claim 1 also be considered on the merits and allowed, upon the allowance of amended claim 1.

THE PRIOR ART REJECTION

Claims 1 and 5 were rejected under 35 USC 102 as being anticipated by USP 6,679,613 ("Mabuchi"); claim 1 was also rejected under 35 USC 102 as being anticipated by USP 2,262,930 ("Gasper"); and claims claims 5 and 8 were rejected under 35 USC 103 as being obvious in view of the combination of Gasper and USP 6,431,716 ("Kusakabe"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

According to the structure of the present invention as recited in amended independent claim 1 (see elected Figs. 14-17, and see Figs. 19-21), the light guide plate (24) comprises an upper illuminating portion (26) to guide light from the light source (23, 50, 51) and to radiate the light toward the upper surface side of the light guide plate, where the hand member (15) is provided, and a lower illuminating portion (35, 40, 53) to guide the received light and radiate the light toward the lower surface side of the light guide plate, where the liquid crystal display member (10) is provided.

As recited in amended independent claim 1, the lower illuminating portion (35, 40, 53) comprises a plurality of line-shaped prisms (36, 54, 43, 45) having reflection surfaces (29a, 31a, 36a, 43a, 45a, 54a, 67a, 68a) on the upper surface of the light guide plate (24), each of the reflection surfaces of

the line-shaped prisms is configured to reflect the light guided in the light guide plate toward the lower surface side of the light guide plate, and each of the line-shaped prisms is provided to be approximately in parallel with a line connecting the light source and a portion of a side surface of the light guide plate which faces the light source.

In addition, according to the present invention as recited in amended independent claim 1, a side surface reflection portion (37, 52, 44, 46) is provided on a side surface of the light guide plate (24) adjacent to the lower illuminating portion, to reflect light which is transmitted straight through the lower illuminating portion and reaches the side surface of the light guide plate toward an inside of the lower illuminating portion.

Still further, according to the present invention as recited in amended independent claim 1, the upper illuminating portion (26) comprises a fine concavo-convex portion (28) formed on the lower surface of the light guide plate (24), and the concavo-convex portion diffusely reflects the light guided in the light guide plate toward the hand member (15) disposed at the upper surface side of the light guide plate.

With this structure, the side surface reflection portion reflects the light radiated from the light source toward the inside of the lower illuminating portion (which is provided on the light guide plate to illuminate the liquid crystal display

member disposed in a lower surface side of the light guide plate). Therefore, the light from the light source can be effectively used to illuminate the liquid crystal display member. In addition, because the upper illuminating portion comprises a fine concavo-convex portion formed on the lower surface of the light guide plate and the concavo-convex portion diffusely reflects the light guided in the light guide plate toward the hand member disposed (above the light guide plate), the light from the light source can be effectively used to illuminate the hand member as well.

It is respectfully submitted that none of the cited references disclose, teach or suggest a side surface reflection portion as according to the present invention as recited in amended independent claim 1, or an upper illumination portion including a fine concavo-convex portion which diffusely reflects light toward a hand member as according to the present invention as recited in amended independent claim 1.

In particular, it is respectfully pointed out that Mabuchi merely discloses guiding light from a light source 12 inside a light guide 16 to be reflected by two reflection portions P and M, while Gasper merely discloses radiating light from a light source into a transparent layer 7 to illuminate designs, for example 8-10, on surfaces of the layer 7. Indeed, the Examiner has not cited Mabuchi as disclosing a side surface reflection

portion, and the Examiner acknowledges in the Office Action that Gasper does not disclose the subject matter previously recited in claim 8, which is now recited in amended independent claim 1.

Kusakabe, moreover, merely discloses a structure in which, as shown in FIG. 10A thereof, light radiated from a light source 12 is guided to the inside of a light guide 13 to be reflected by light reflection means 26 on the end 17, and then to be reflected by optical path conversion means 15 which is provided on a side surface of the light guide 13. The reflected light is introduced to a transparent substrate 2 and is reflected by a groove of a light reflection pattern 7 formed on the transparent substrate 2 toward the lower surface side.

It is respectfully submitted that, even in combination, Mabuchi, Gasper and Kusakabe do not at all disclose, teach or suggest an illumination device which, as recited in amended independent claim 1, includes both a side surface reflection portion that reflects light irradiated from the light source toward the inside of the lower illuminating portion which illuminates the liquid crystal display member disposed below the light guide plate, and an upper illumination portion including a fine concavo-convex portion which diffusely reflects light toward a hand member disposed at the upper surface side of the light guide plate, such that light from the light source can be effectively used.

Accordingly, it is respectfully submitted that the present invention as recited in amended independent claim 1, as well as claims 4, 9-12, 14, 15 and 17 depending therefrom, clearly patentably distinguishes over Mabuchi, Gasper and Kusakabe, taken singly or in any combination consistent with the respective fair teachings thereof, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

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APPENDIX - ANNOTATED CLAIM 1

1. (Currently Amended) An illumination device comprising:

a light source (23, 50, 51) to radiate light;

a light guide plate (24) to receive the light radiated from
the light source through a side surface of the light guide plate
and to guide the received light in a surface direction of an
upper surface and a lower surface of the light guide plate to
perform a surface emission;

a hand member (15) disposed at an upper surface side of the
light guide plate; and

a liquid crystal display member (10) at a lower surface side
of the light guide plate;

wherein the light guide plate comprises:

an upper illuminating portion (26) to guide the
received light from the light source in the surface direction and
to radiate the light toward the upper surface side of the light
guide plate;

a lower illuminating portion (35, 40, 53) to guide the
received light from the light source in the surface direction and
to radiate the light toward the lower surface side of the light
guide plate, wherein the lower illuminating portion (35, 40, 53)
comprises a plurality of line-shaped prisms (36, 54, 43, 45)

having reflection surfaces (29a, 31a, 36a, 43a, 45a, 54a, 67a, 68a) on the upper surface of the light guide plate (24), wherein each of the reflection surfaces of the line-shaped prisms is
25 configured to reflect the light guided in the light guide plate toward the lower surface side of the light guide plate, and wherein each of the line-shaped prisms (36, 54, 43, 45) is provided to be approximately in parallel with a line connecting the light source (23, 50, 51) and a portion of a side surface of
30 the light guide plate (24) which faces the light source; and

a side surface reflection portion (37, 52, 44, 46) provided on a side surface of the light guide plate adjacent to the lower illuminating portion, to reflect light which is transmitted straight through the lower illuminating portion and
35 reaches the side surface of the light guide plate toward an inside of the lower illuminating portion;

wherein the upper illuminating portion (26) comprises a fine concavo-convex portion (28) formed on the lower surface of the light guide plate (24), and the concavo-convex portion
40 diffusely reflects the light guided in the light guide plate toward the hand member (15) disposed at the upper surface side of the light guide plate.